DIPOBRATO SARBAPALLI

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EDUCATION

University of Illinois at Urbana Champaign (UIUC) *Urbana-Champaign, IL*
Doctor of Philosophy in Materials Science and Engineering, GPA: 3.90/4.00 *Dec 2022 (expected)*
Focus: Use of graphene to study interfaces in alkali-ion and redox flow batteries

University of Illinois at Urbana Champaign (UIUC) *Urbana-Champaign, IL*
Master of Science in Civil Engineering, GPA: 4.00/4.00 *May 2018*
Focus: Nucleation seeding for controlling kinetics of inorganic aluminosilicate binder (geopolymer) reactions

HONORS

- Awarded with the Best Poster Award during the SEAC Poster session, PITTCON, Chicago (Feb 2020)
- Awarded the DAAD-RISE Fellowship to intern with BASF at Ludwigshafen, Germany (March 2017)
- Rated as Outstanding Teaching Assistant for CEE 300 – Behavior of Materials (Spring 2018)
- Rated as Outstanding Teaching Assistant for CEE 401 – Concrete Materials (Fall 2016, 2017)

WORK EXPERIENCE

BASF, Ludwigshafen, Germany || Superviser: Dr. Tobias Umbach *Summer 2017*

- Used atomic force microscopy to measure adhesion of paint and adhesive polymer particles to inorganic fillers like calcium carbonate, mica, silica and iron oxide
- Applied numerical models to treat experimental data on Mathematica to quantify adhesion

RESEARCH AND TEACHING EXPERIENCE

Department of Chemistry, UIUC || Adviser: Dr. Joaquín Rodríguez-López *Fall 2018 - Present*

- Studying alkali-ion intercalation in microfabricated graphene with or without surface modifiers
- Characterizing electrode-electrolyte interfacial processes affecting molecular reactivity in redox-flow batteries with Scanning Electrochemical Microscopy and COMSOL simulations
- Using MATLAB and Python to develop scripts for rapid analysis of electrochemical data

Department of Civil Engineering, UIUC || Adviser: Dr. Paramita Mondal *Fall 2015 - Summer 2018*

- Improved performance in green aluminosilicate based binders by adding external seeding agents
- Characterized the dissolution of sodium aluminosilicates in salicylic acid-methanol

Department of Civil Engineering, UIUC || Courses: CEE 300 and CEE 401 *Spring 2016 - Spring 2018*

- Demonstrated experiments characterizing mechanical properties of steel, cast irons, polymers
- Conducted experiments on preparing and measuring properties of fresh and hardened concrete
- Guided classes with 16-22 students, 10-20 hours per week, held office hours, graded lab reports

SKILLS

Languages: MATLAB, Mathematica, Python, LaTeX

Packages: OriginPro, COMSOL, ImageJ, AutoCAD 2D, VESTA, CasaXPS, TOPAS, Illustrator, EndNote

Materials Characterization: Electron microscopy, X-Ray Diffraction, Infrared and Raman Spectroscopy, Isothermal Calorimetry, Atomic Force Microscopy, X-Ray Photoelectron Spectroscopy ^{29}Si and ^{27}Al Nuclear Magnetic Resonance, Dynamic Light Scattering, Gas Adsorption, Helium Pycnometry

Google Scholar: https://bit.ly/3c9oQqC **Publications:** 6 **Citations:** 21